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Title: IMPROVEMENTS IN WALLING ;

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Applicant(s): ROBERT THOMSON ;

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Equivalents:

ABSTRACT:

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26 APR 1925

PATENT SPECIFICATION



Application Date : Jan. 22, 1924. No. 1772/24. **229,829**

(Patent of Addition to No. 207,864 : Sept. 5, 1922).

Complete Left : Oct. 21, 1924.

Complete Accepted : March 5, 1926.

PROVISIONAL SPECIFICATION.

Improvements in Walling.

I, ROBERT THOMSON, of 52, Chancery Lane, London, W.C. 2, a subject of the King of Great Britain, do hereby declare the nature of this invention to be as follows:—

This invention relates to an improvement in, or modification of, the invention described and claimed in Specification No. 207,864, and refers more particularly to the type of walling shown in Figure 7 thereof.

The object of the present invention is to ensure that, in constructing walling within which sheeting that forms an upright damp-proof course is enclosed, adequate air space or spaces to stop or hinder the passage of heat shall be provided between such sheeting and one or both of the adjacent upright opposed faces of the two leaves of the wall and that mortar may be prevented from dropping into these insulating spaces.

The walling may be constructed of blocks and slabs of concrete or other suitable material built in horizontal courses, each course consisting of two leaves of unequal thickness built on opposite sides of waterproof sheeting so disposed as to prevent damp passing from one leaf to the other. The thicker of the two leaves is composed of blocks and the thinner of slabs and as they are so built that a course in which the blocks are outside is followed by one in which they are inside the two leaves of thick blocks overlap each other and effective cross bond which ties the two leaves of the wall together is thus obtained.

According to the invention the said upright faces of the blocks and/or slabs are provided with cavities or with projections, so arranged that when the blocks and slabs which respectively form the two leaves of each course of the wall are set

in position their recessed portion or their general surface behind their projecting portion or portions are adequately spaced from the sheeting to ensure efficient insulation, while the upper portion of the blocks and slabs which form each course of the wall come sufficiently close together to enable the mortar, which forms the bedding of the next course of blocks and slabs to seal the top of the underlying chamber without dropping into it.

At about the middle of the general surface of the blocks and slabs which face towards the interior of the wall one or more bosses, slightly raised above the general surface, may be provided for the purpose of preventing the sheeting coming into contact with the general surface of either of the building units between which it is enclosed.

The sheeting is preferably carried continuously throughout the height of the wall with broad overlaps where two sheets join, thus making it impossible for damp to pass from one leaf to the other.

In one construction each block or slab is formed with a fillet which extends along one side and projects slightly beyond the general surface of such building unit.

In constructing walling one of the leaves in each course is built of blocks and the other of slabs which are preferably set in position so that the projecting fillet serves to increase the area of the lower bedding surface of the slabs, while the blocks are built so that the projecting fillet serves to increase the area of their upper surface upon which the blocks and slabs which form the next higher course are bedded.

By building the slabs of one leaf over the blocks in the underlying leaf in successive courses efficient cross bond is thus

provided and the two sets of parallel closed air spaces being alternately in different planes thereby form a staggered vertical series of heat insulating air chambers the height of which is limited by the height of the blocks and slabs.

This method of constructing walling enables the damp-proof sheeting to be carried up diagonally through the space between the upright faces of the opposed blocks and slabs, so that two sets of sealed air chambers each of a wedge shaped transverse section are formed within each course of the wall.

This form of chamber is preferred

because it is difficult, if not quite impossible, for two columns of air to circulate within its triangular section, so that the contained air can thus be maintained as nearly as possible at rest, and since still dry air is one of the best heat insulators known, except a vacuum, walling which gives an absolutely dry interior and has an exceptionally high heat insulating efficiency is thus easily and cheaply obtainable.

Dated this 22nd day of January, 1924.

MATHYS & Co.,

Chartered Patent Agents,

52, Chancery Lane, London, W.C.2.

COMPLETE SPECIFICATION.

Improvements in Walling.

I, ROBERT THOMSON, of 52, Chancery Lane, London, W.C.2, a subject of the King of Great Britain, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to an improvement in, or modification of, the invention described and claimed in Specification No. 207,864, and refers more particularly to the type of walling shown in Figure 7 thereof.

The object of the present invention is to ensure that, in constructing walling within which sheeting that forms an upright damp-proof course is enclosed, there may be available sufficient air space between each face of the sheeting and the adjacent upright opposed faces of the two leaves of the wall to enable two distinct parallel sets of insulating air chambers, which are divided from each other by the sheeting, to be provided for the purpose of stopping or greatly hindering the passage of heat from one face of the wall to the other; to prevent during construction mortar dropping into these air spaces; to ensure that the units of which such two-leaved cavity walling is constructed may without the employment of metal or other cross ties so securely hold each other in cross bond as to enable the two leaves of the wall to act together in all respects as a single structural unit and that the stability of such cavity walling may be equal to that of solid walling of corresponding thickness.

The walling, which is of the two-leaved self-bonding cavity type, may be constructed of units of pre-cast concrete or of brick, hollow tile or other suitable material built in horizontal courses. Each

course is composed of two leaves of unequal thickness, the thicker consisting wholly of blocks and the thinner wholly of slabs built on opposite side of waterproof sheeting so disposed in the interior of the wall as to form a vertical damp-proof course which preferably insulates completely the two leaves of the wall from each other both as regards the horizontal bedding surfaces and the upright faces of their interbonding portions. As the blocks and slabs are so dimensioned and the walling is so built that a course in which the blocks form the outer face is followed by one in which they form the inner face, the two leaves of blocks overlap each other and effective cross bond which securely ties the two leaves of the wall together is thus obtained both at the lower and the upper bed joints of every course.

According to the invention the said upright meeting faces of the blocks or blocks and slabs are provided with projections, such, that when the blocks or blocks and slabs, which respectively form the two leaves of each course of the wall, are set in position, their general surfaces behind their projecting portion or portions are adequately spaced from the sheeting to ensure efficient insulation, while the upper portion of the blocks or blocks and slabs which form each course of the wall are sufficiently close together to enable the mortar, which forms the bedding of the next course of blocks or blocks and slabs to seal the top of the underlying chamber without dropping into it, and to give a double cavity type of walling having stability equal to that of solid walling of the same thickness. At about the middle of the general surface of the blocks and slabs which face

towards the interior of the wall one or more bosses, slightly raised above the general surface, may be provided for the purpose of preventing the sheeting coming into contact with the general surface of either of the two building units between which it is enclosed.

In the accompanying drawings:—

Figures 1 and 2 are perspective views of one form of block and slab, respectively, according to the invention,

Figure 3 being a transverse vertical section through a wall built of such blocks and slabs.

In the construction illustrated, each block 1 and/or slab 2 is formed with a fillet 3 which extends along one side and projects slightly beyond the general surface of such building unit. Each slab and block has two bosses 4 on its filleted face.

In constructing walling with such units one of the leaves in each course is built wholly of blocks 1 and the other wholly of slabs 2 with damp-proof sheeting 6 sandwiched between these two leaves.

The blocks and slabs are set in position so that the projecting fillet 3 serves to increase the lower bedding surface of the slabs while the blocks are built so that their projecting fillet serves to increase the bedding and bonding area of their upper surface upon which the blocks and slabs which form the next higher course are bedded.

By building the walling so that a course in which the blocks form the outer leaf is followed by one in which they form the inner leaf all courses of blocks overlap each other throughout their entire length both on their lower and on their upper beds and this overlap 7 provides cross bond that securely ties the two leaves of the wall to each other and thus enables them to act together as a single structural unit.

The units of which the walling is constructed are thus self-bonding each block throughout its entire length being securely gripped by four blocks on the opposite face of the wall, two of which are in the course above and two in the course below, and each block besides being thus held is itself at the same time engaging eight units, four of which are in the course above and four in the course below, two of these in each course being blocks and two slabs, so that the blocks and slabs which constitute the two leaves in each course are securely tied together both on their upper and their lower beds thereby giving this type of cavity walling

a degree of stability equal to that of walling of the solid type.

As between the horizontal beds 7 and around the upright faces of the damp-proof sheeting 6 is carried the inter-bonding portions of the blocks in each course and is broadly overlapped at all joinings, it is thus, in effect, continuous throughout the interior of the wall. In this way the sheeting completely insulates the two leaves of the wall from each other, both as regards their horizontal bedding surfaces 7 and their upright meeting faces so that no damp can pass from the one leaf to the other either directly or by capillary attraction.

The bosses 4 prevent the sheeting coming into contact with the general surface of the blocks or slabs, so that two sets of parallel closed air spaces 5, the height of which is limited by the height of the blocks or slabs, are thereby formed. These parallel spaces 5 being in different planes in successive courses and in the same plane in alternate courses thereby form a staggered vertical series of two sets of parallel heat insulating air chambers 8.

This method of constructing walling enables the damp-proof sheeting to be carried up diagonally through the space between the upright faces of the opposed blocks 1 and slabs 2 so that two sets of sealed air chambers 8 each of a wedge shaped transverse section are formed within each course throughout the interior of the wall.

This form of chamber is preferred because it is difficult if not quite impossible, for two columns of air to circulate within its triangular section, so that the contained air can thus be maintained as nearly as possible at rest, and as still, dry air is one of the best heat insulators known, except a vacuum, walling which gives an absolutely dry interior and has an exceptionally high heat insulating efficiency is thus easily and cheaply obtainable.

Since the damp-proof sheeting is itself a good non-conductor of heat, this sheeting and the two parallel sets of sealed air chambers thereby provide a triple system of insulation for the conservation of heat and as the inner leaf of the wall is preferably made of clinker concrete and this leaf and the air in its inner series of insulating chambers are kept absolutely dry by the damp-proof sheeting and as this air besides being dry is also still the physical condition of this leaf is therefore perfect both for the conservation of heat and for the prevention of condensation.

An important economic advantage of

5 this triply-insulated damp-proof type of
walling is that though the blocks and
slabs of which it is constructed may be
porous and their bedding jointing and
pointing defective, its damp-proof, and
10 heat insulating, properties remain effi-
cient, so that rough-cast or other forms
of surface rendering may be dispensed
with thereby enabling a substantial
saving in cost to be effected

15 It is to be understood that the term
block includes bricks and so-called hollow
tiles.

20 Having now particularly described and
ascertained the nature of my said inven-
tion and in what manner the same is
to be performed, I declare that what I
claim is:—

1. An improvement in or modification
25 of the invention claimed in Specifica-
tion of Patent No. 207,864, comprising,
walling, built of blocks, or of blocks and
slabs which are provided with projections
such that when the blocks or blocks and
slabs which respectively, form the two
leaves of each course of a wall are set in

position, their general surfaces behind
their projecting portions, are spaced from
the damp-proof sheeting to ensure efficient
insulation, while the upper portions of the
30 blocks or blocks and slabs which form
each course of the wall are sufficiently
close together to enable the mortar, which
forms the bedding of the next course of
blocks or blocks and slabs, to seal the top
35 of the underlying chamber without drop-
ping into it.

2. Walling according to Claim 1,
wherein the blocks or slabs are provided
with one or more bosses on their inner
40 surfaces substantially as and for the
purpose hereinbefore set forth.

3. Damp-proof and heat insulated
bonded walling built with blocks and
slabs constructed substantially as herein-
45 before described with reference to the
accompanying drawings.

Dated this 21st day of October, 1924.

MATHYS & Co.,
Chartered Patent Agents, 50
52, Chancery Lane, London, W.C. 2.

[This Drawing is a reproduction of the Original on a reduced scale.]

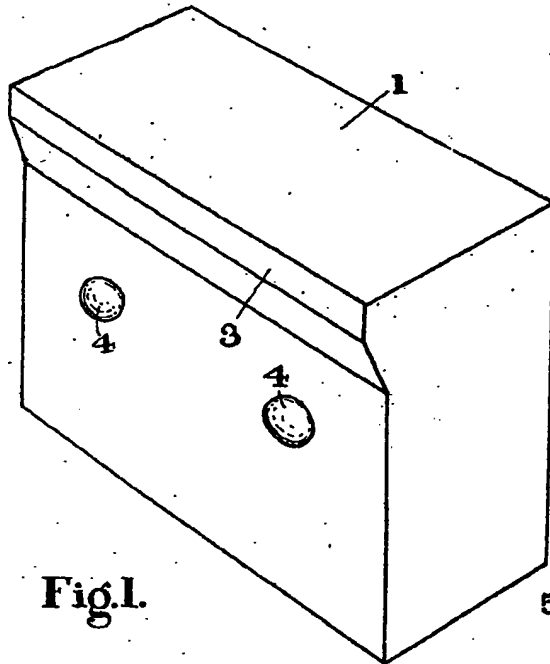


Fig. 1.

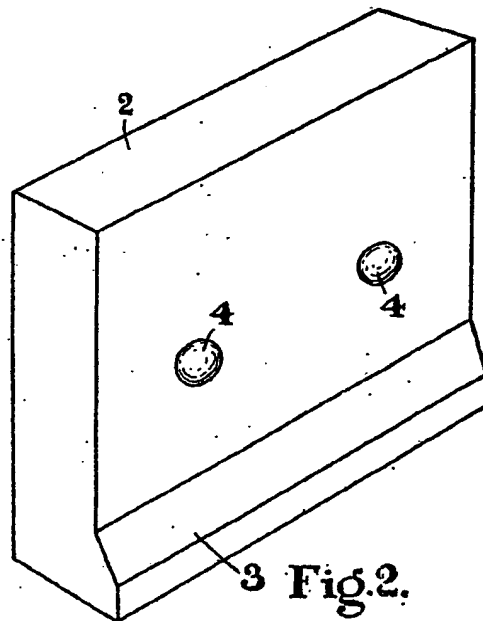


Fig. 2.

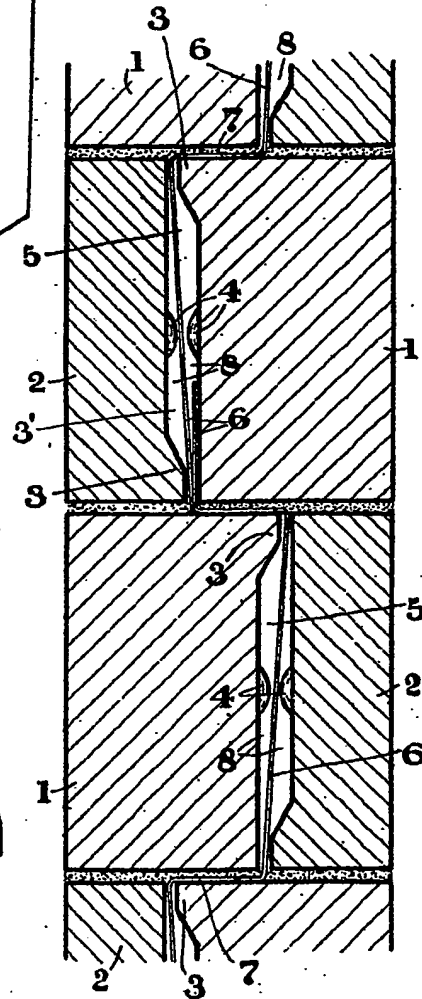


Fig. 3.

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